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BUREAU OF INTELLIGENCE AND RESEARCH

INR

# What and why GIS?
# Overview of workshop geospatial tools

# What and Why GIS?

GIS: System or science

Tools, data repository, resource, problem solving, decision making

Importance of know where things are and why

Data + Software + Analysis = “Smart Maps”

# GIS as a coordinated system

Data
Algorithms
Display
Management
People

→ Hardware
Software
Geographic data

→ Visualization
Analysis

→ Georeferenced: attributes
Layers of information

# The Information Process

Data: collection of observations and measurements about the real world

Information: modeling and analysis of data

Knowledge: Interpretation and understanding of information to inform decisions

Wisdom: Experience

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# Information Management Strategy

Clear definition of problem

- Set priorities

Assessment of data

- Review existing data

Assessment of available resources

Analysis procedures

- Flowcharting

Documentation

Output

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# Data

Digital

- Variety of sources – Best Available Data
- New geospatial tools:
  - Global positioning systems
  - Geographic information systems
  - Remote sensing
  - Collaborative/participatory mapping
- Old questions:
  - Where do we get data?
  - What is the accuracy?
  - How reliable is it?

# Communicating with Maps: Cartographic concepts

Scale

- What shall be seen and not seen?

Projection

- What shall be distorted?

Legend

- What is being mapped?

Symbolization

- What story is told?

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# Map Elements

- Title
  - What is the map about?
- Direction
  - How is the map oriented with regard to the earth?
- Source
  - Where did the data come from?
- Date
  - How old is the information?
- Author
  - Who made the map?

# Cartographic generalization

Every map is as much about what is not represented as what is represented

- Simplication
- Classification
- Induction

# Human Geography Data Examples

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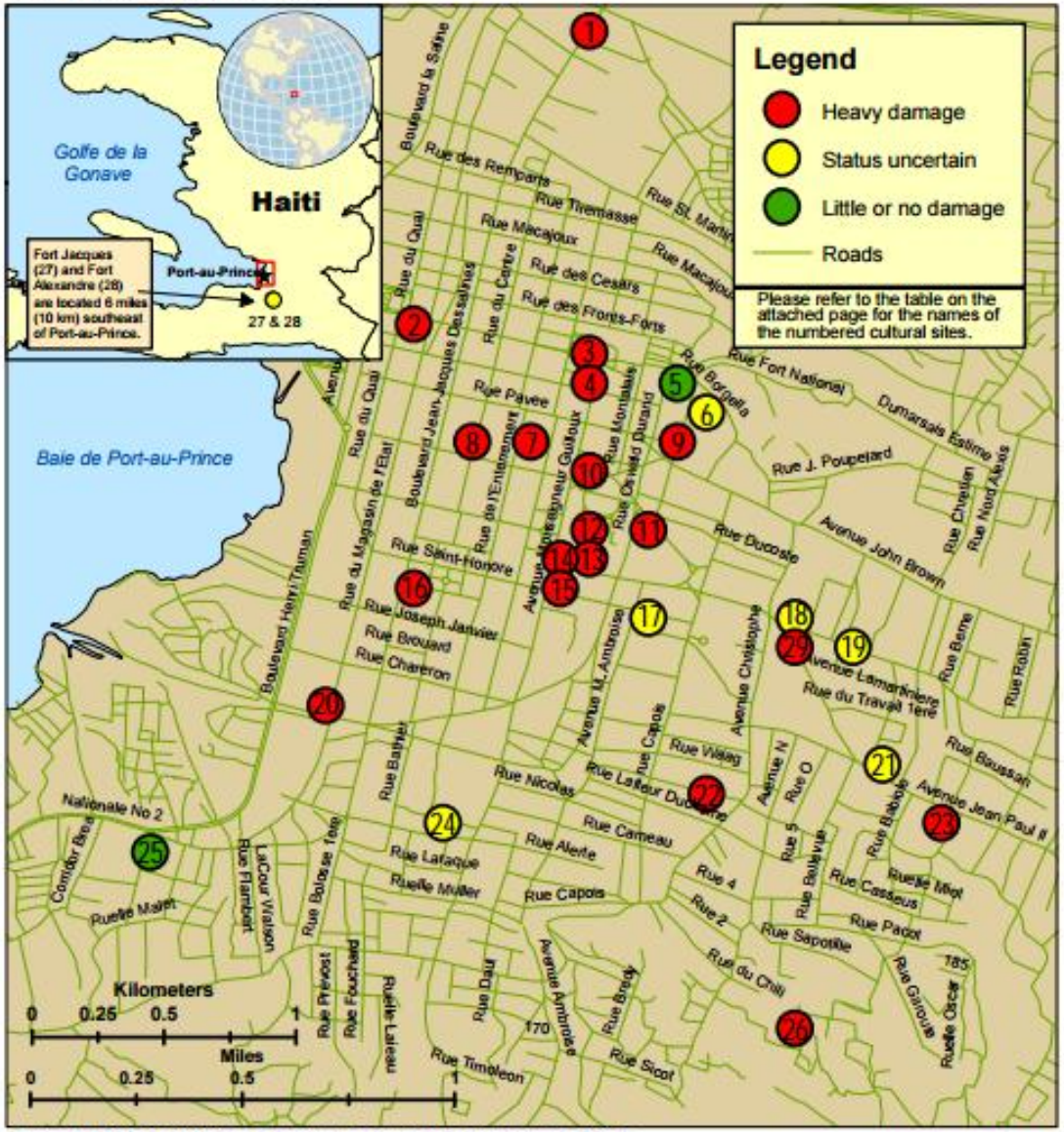
# Haiti: Damage Assessment of Selected Cultural Sites in and near Port-au-Prince




Sources: UNOSAT, CNN, World Monuments Fund, U.S. Department of State

February 23, 2010 - U129 STATE (HIU)

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# PEPFAR Operating Unit: Physical Access to HIV Testing and Site Yield in a High HIV Burden District

PEPFAR

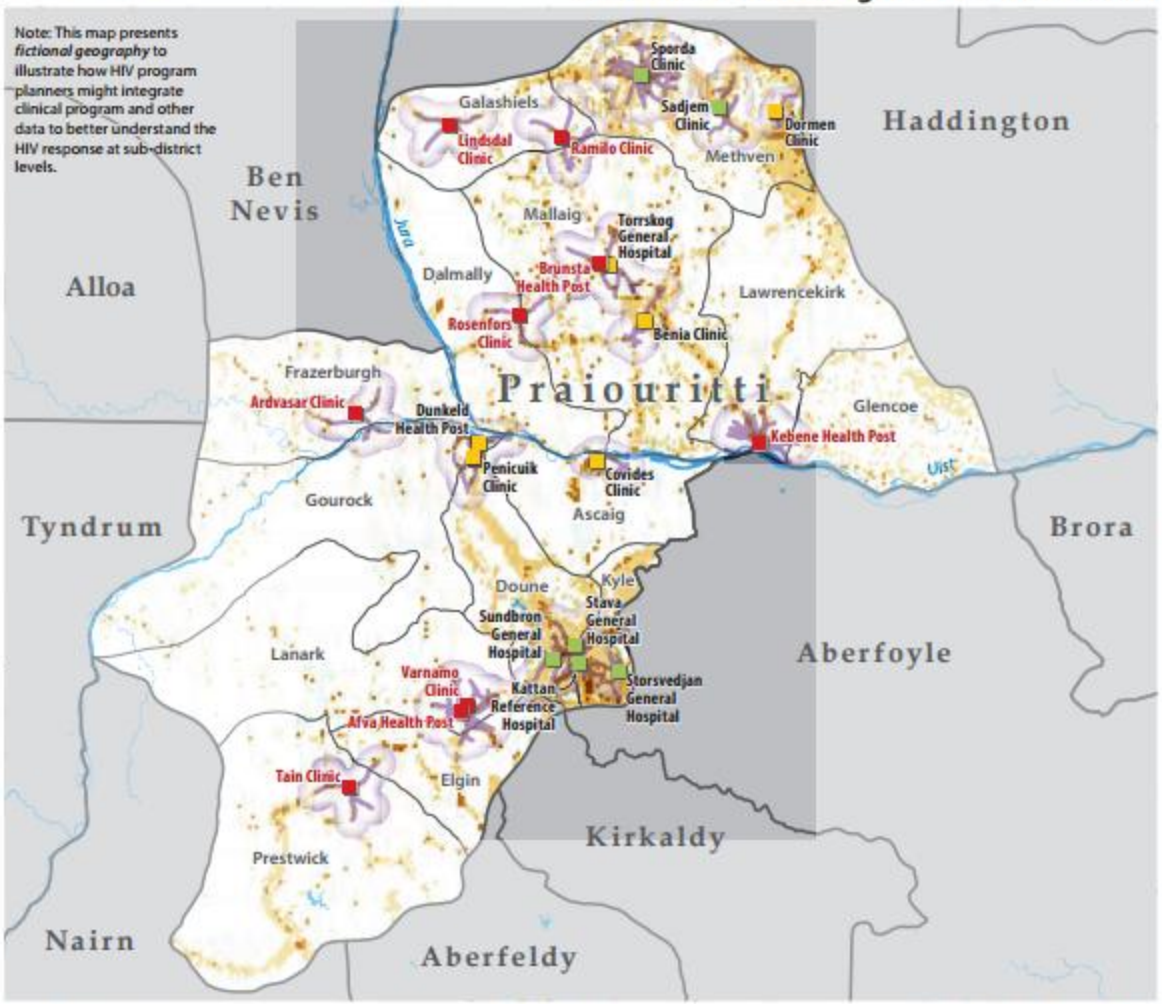
HIU HUMANITARIAN INFORMATION UNIT

U.S. Department of State
hiu_info@state.gov
http://hiu.state.gov

Large spatial variation in HIV is likely within small areas, even in high HIV burden districts. Therefore, HIV programs should map facility level program data and estimate the geographic reach of their response. In this district, the estimated catchment area of HIV testing sites shows that parts of the population are further than 20 kilometers by road from an HIV testing site. Approximately 49% of the population in this priority district has estimated physical access to an HIV testing site. Maps that relate HIV testing and population distribution can help answer key programmatic questions at the subdistrict level such as:

- Do high-, low-, or no-yield sites cluster?
- Are sites with high HIV testing yields located in places with high population density?
- Which areas outside of estimated HIV testing catchments might be prioritized for expanded testing?

Note: This map presents *fictional geography* to illustrate how HIV program planners might integrate clinical program and other data to better understand the HIV response at sub-district levels.




**HIV testing yield**
- High
- Low
- No

**Population density**
- High
- Low

20 km road distance from HIV testing site

Physical access buffer

State boundary

District boundary

Names and boundary representation are not necessarily authoritative

Source: PEPFAR

September 12, 2014 - U1088 STATE (HIU)

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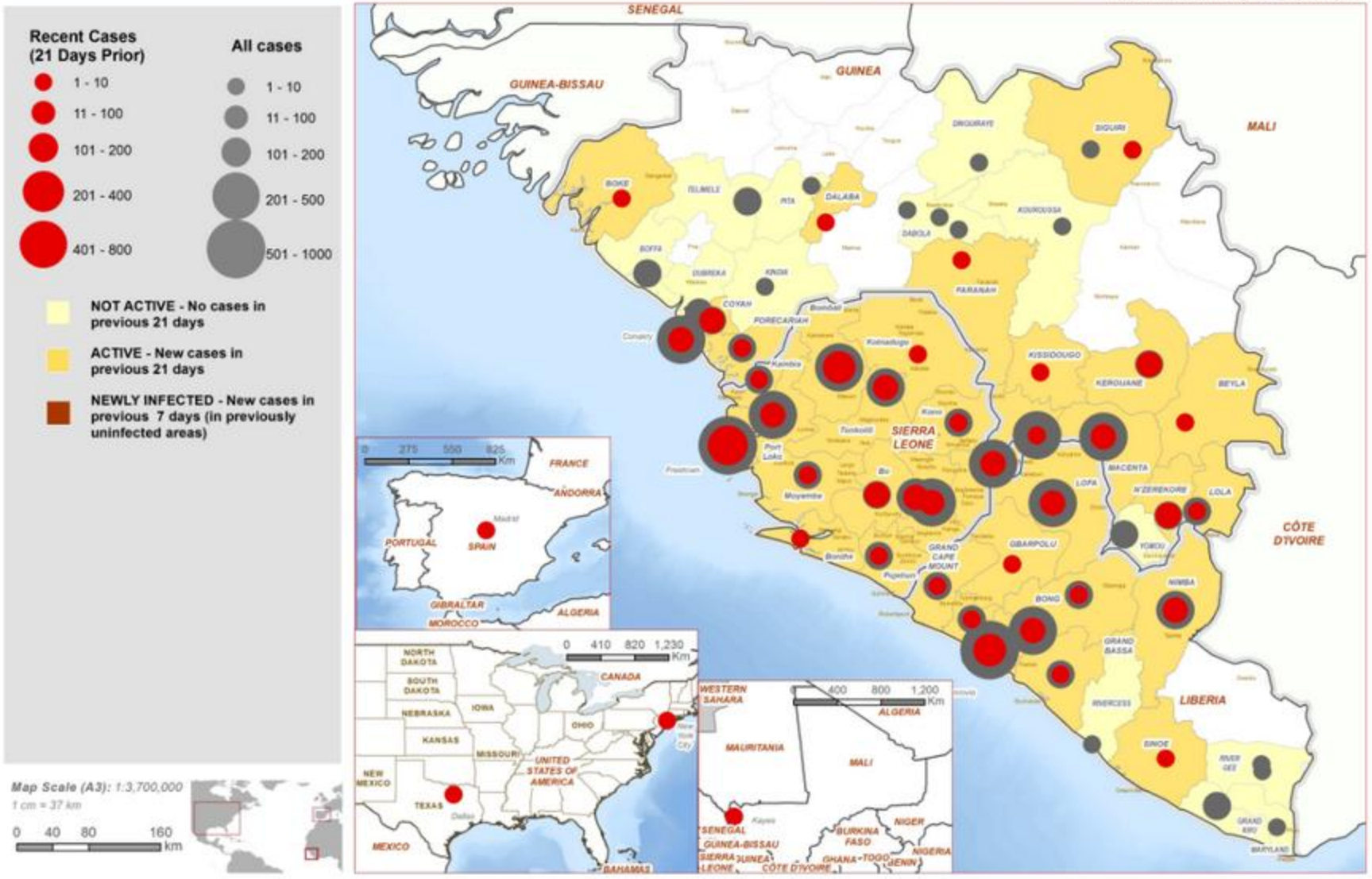
# EBOLA OUTBREAK RESPONSE: REGIONAL CONFIRMED AND PROBABLE CASES

World Health Organization

**MAP DATE: 29 October 2014**



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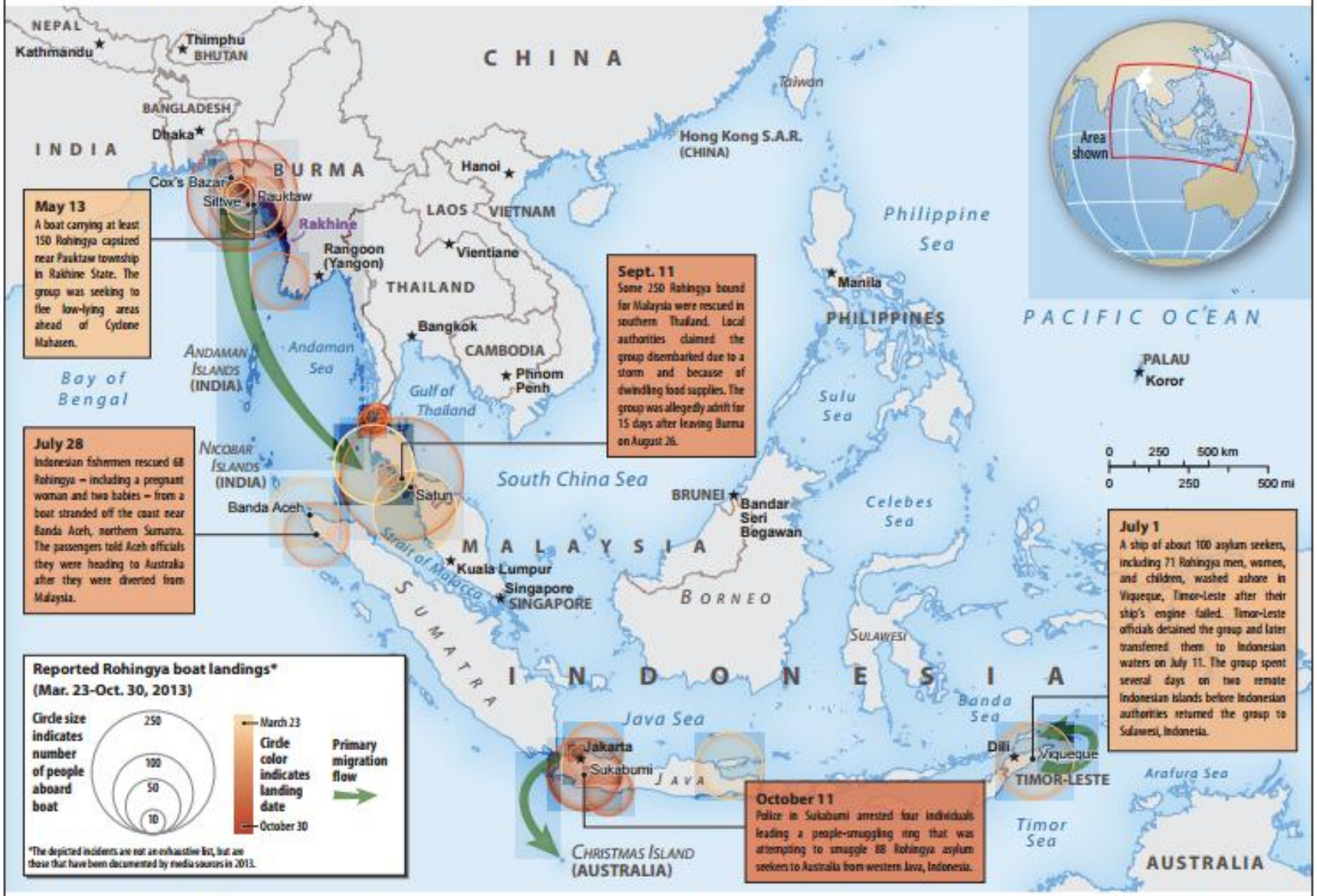
# Southeast Asia: Rohingya Maritime Migration Update (March-October 2013)




**May 13**
A boat carrying at least 150 Rohingya capsized near Pauktaw township in Rakhine State. The group was seeking to flee low-lying areas ahead of Cyclone Mahasen.

**July 28**
Indonesian fishermen rescued 68 Rohingya – including a pregnant woman and two babies – from a boat stranded off the coast near Banda Aceh, northern Sumatra. The passengers told Aceh officials they were heading to Australia after they were diverted from Malaysia.

**Sept. 11**
Some 250 Rohingya bound for Malaysia were rescued in southern Thailand. Local authorities claimed the group disembarked due to a storm and because of dwindling food supplies. The group was allegedly adrift for 15 days after leaving Burma on August 26.

**July 1**
A ship of about 100 asylum seekers, including 71 Rohingya men, women, and children, washed ashore in Viqueque, Timor-Leste after their ship's engine failed. Timor-Leste officials detained the group and later transferred them to Indonesian waters on July 11. The group spent several days on two remote Indonesian islands before Indonesian authorities returned the group to Sulawesi, Indonesia.

**October 11**
Police in Sukabumi arrested four individuals leading a people-smuggling ring that was attempting to smuggle 88 Rohingya asylum seekers to Australia from western Java, Indonesia.

**Reported Rohingya boat landings* (Mar. 23-Oct. 30, 2013)**

Circle size indicates number of people aboard boat: 250, 100, 50, 10

Circle color indicates landing date: March 23 – October 30

Primary migration flow

*The depicted incidents are not an exhaustive list, but are those that have been documented by media sources in 2013.

Names and boundary representation are not necessarily authoritative

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Source: Open source press reporting

# Burma 2010 Election Results

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## One small step for democracy?

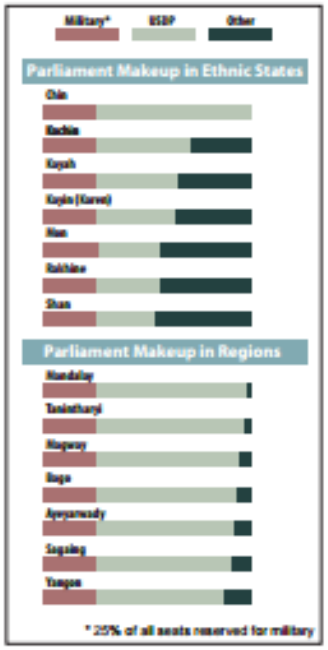
Amid allegations of election irregularities, including ballot stuffing, coercion, fraud, intimidation, and violence (see Burma 2010 Election Irregularities, page 2), the regime-backed Union Solidarity and Development Party (USDP) won national, regional, and state elections.

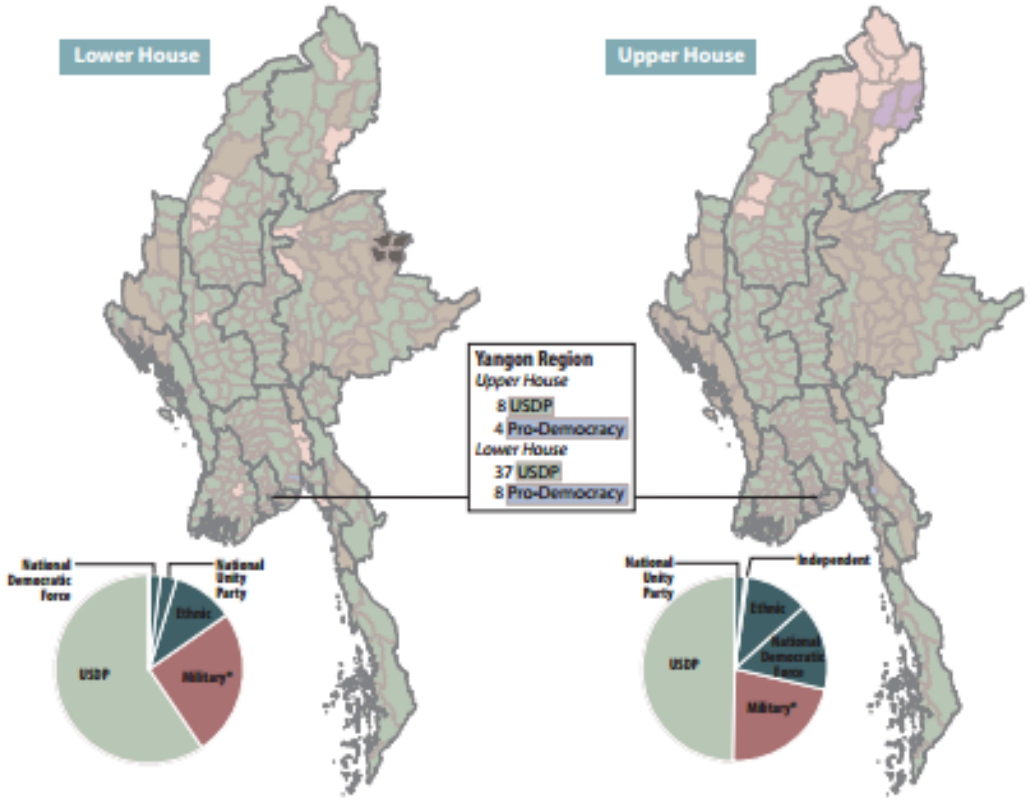
Despite USDP using election apparatus and military force to manipulate votes, some people voted for the party of their choice. Ethnic states in particular voted for non-USDP candidates (see table below).

**National Parliament election results, 2010***

| | USDP | Ethnic | Pro-Democracy | National Unity Party | Independent | Canceled |
|---|---|---|---|---|---|---|
| People's Parliament (Lower House) | 258 | 47 | 9 | 12 | 0 | 4 |
| Nationalities Parliament (Upper House) | 129 | 26 | 7 | 5 | 1 | 0 |

* The military appoints 25% of all seats to its soldiers: 56 additional seats in the Nationalities Parliament, 110 additional seats in the People's Parliament




Names and boundary representation are not necessarily authoritative.

Sources: Democratic Voice of Burma, Burma News International, Irrawaddy, International Crisis Group, AltASEAN.org

March 26, 2012 - US53 STATE (HIU)